CHEMICAL TERRORISM RESPONSE GUIDE

for

Clinical Laboratories

Updated March 2005

Utah Department of Health

Division of Epidemiology and Laboratory Services

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INTRODUCTION

The initial laboratory participating in an unannounced chemical terrorism event is likely to be a hospital-based or independent clinical laboratory. For clinicians, your laboratory may be the first to receive samples of urine and blood from exposed individuals. In such an event, there will be an unprecedented need to identify the chemical agent(s) used and determine the exposure levels patients received. To assist clinical laboratories in this effort, the Utah Department of Health Laboratory has set up a chemical terrorism comprehensive response plan for rapid toxic screening of samples from patients exposed to chemical agents. This guide contains a summary of notification steps, specimen collection requirements, packaging and shipping instructions, and an overview of chemical terrorism agents. **This guide is intended for use by laboratories whose staffs have been trained in chemical terrorism sample collection through programs offered by the Utah Department of Health Laboratory.**

USING THIS GUIDE

This guide is meant to provide a resource for quick decision-making in response to a real or suspected chemical terrorism event. Integration of its contents must be done in accordance with the requirements of regulatory agencies and incorporated into facility specific plans through appropriate authorities in the approval and review processes.

We suggest that this guide be stored near the laboratory workbench where it can be readily available to on-shift staff. It is designed to be a companion to the "BioTerrorism Response Guide for Clinical Laboratories" which is also available from the Utah Department of Health Laboratory.

Each person that may be involved with samples from patients potentially exposed to chemical terrorism agents should be trained in sample collection requirements, transporting protocols, and whom to contact if chemical terrorism is suspected. If you have any questions at any time, please call the Utah Department of Health Laboratory – our contact information is found in the contacts section of this guide.

CONTACT INFORMATION

Utah Public Health Laboratory (UPHL)

Division: Epidemiology and Laboratory Services

Address: 46 North Medical Drive
Salt Lake City, UT 84113

Phone: 801-584-8400 (general line)

Fax: 801-584-8486

URL: http://www.health.utah.gov/els/envsrv

Bureau Director	Sanwat Chaudhuri, PhD	801-584-8476 cell 801-557-7295
Assistant Bureau Director	Jack Oman	801-584-8541
Chemical Terrorism Coordinator		801-584-8578 cell 801-971-3083
Assistant Coordinator	Tamanna Parvez	801-883-4658
Chemical Terrorism Lead Chemist	Steven Butala, PhD	801-584-8567
Assistant Chemist	Hannah Wilkowske	801-883-4657
Secretary	Stephanie Rogers	801-883-4655

RAPID TOXIC SCREEN

The rapid toxic screen includes methods and procedures for analyzing clinical samples for the presence of chemical warfare agents, certain biological toxins, incapacitating agents, and industrial chemicals. Though it is called a screen, it is actually quantitative analysis, which can be useful in determining patient exposure levels.

Chemical warfare agents	Nerve agents, e.g. sarin, soman, VX Sulfur mustards, e.g. HD, sesquimustards Nitrogen mustards, e.g. NH1, NH2 Cyanide Lewisite
Toxins	Ricin Saxitoxin Natural toxins
Incapacitating agents	Drugs of abuse, e.g. cocaine, opiates, PCP Others, e.g. scopolamine
Industrial chemicals	Volatile organic compounds, e.g. benzene, carbon tetrachloride Pesticides, e.g. malathion, parathion Heavy metals, e.g. lead, arsenic, mercury Others

Toxic industrial chemicals are also of concern as agents of potential chemical terrorism. Their intentional release in a populated area is likely, since rail and truck transport them throughout the country every day.

The rapid toxic screen procedure is performed under the direction of the Centers for Disease Control and Prevention (CDC) – National Center for Environmental Health, Division of Laboratory Sciences. Their contact information is included in the contacts section of this guide.

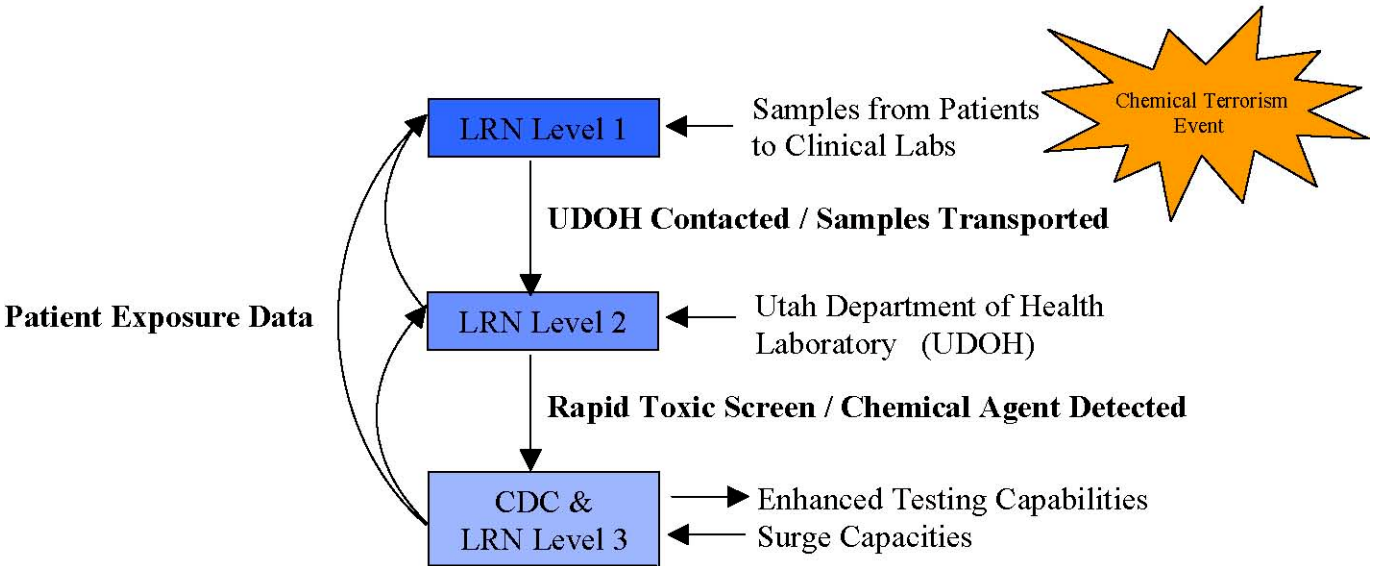
At the Utah Department of Health (UDOH) Laboratory we have developed testing capacities for heavy metals and cyanide; and are working towards methods for nerve agents. Currently, we are validated and participating in ongoing proficiency tests administered by CDC and reported through the LRN.

LABORATORY RESPONSE NETWORK

Through CDC preparedness programs in partnership with the Association of Public Health Laboratories (APHL), other federal agencies, and state public health laboratories, the Laboratory Response Network (LRN) has been established in order to provide aid in terrorism response. For chemical terrorism, clinical laboratories are categorized into a three-tiered network – from Level 1 to Level 3 – based on sample collection capabilities and diagnostic instrumentation. In this plan, most hospital-based or independent clinical laboratories capable of collecting patient specimens of urine and blood are considered part of the LRN at Level 1. Clinical laboratories operating at Level 1 serve a critical role in initiating response plans and collecting patient specimens.

Hospital emergency departments may be the first to observe unusual patterns of illness and/or receive patients exposed in a chemical terrorism event. Clinical laboratories servicing these types of facilities must initiate the LRN response by contacting their Level 2 coordinating agency. For the State of Utah, the Utah Department of Health Laboratory (Level 2) is the designated contact for dispatching the LRN response and subsequent rapid toxic screening process. The Utah Department of Health Laboratory has arranged with CDC and partnered with LRN Level 3 laboratories to perform analysis of chemical terrorism patient samples.

There are two main reasons for coordinating the analysis of chemical terrorism patient samples. First, if the agent is unknown, samples can be sent to CDC for quantitative analysis of 150 different chemical agents or their metabolites in urine, serum, and whole blood. Second, CDC maintains the capability to perform PCR analysis for detection of Biosafety Level-4 biological agents, which could be vital in a potential dual-exposure event (combined biological and chemical). This initial screening by CDC helps to ensure the health and safety of persons working with chemical terrorism patient samples.



Shipping Instructions for Specimens Collected from People Potentially Exposed to Chemical Terrorism Agents

Collecting specimens

Required specimens

Unless you are otherwise directed, collect the following specimens from each person who may have been exposed:

- **Urine—Collect at least 25 mL.** Use a screw-capped plastic container. Please do not overfill. **Freeze as soon as possible** (−70° C or dry ice preferred). If possible, ship the specimen on dry ice. If dry ice is not available, you may ship frozen specimens with freezer packs. **For pediatric patients, collect urine only, unless otherwise directed by CDC.**
- **Whole blood—Use three 3-, 5-, or 7-mL purple-top (EDTA) tubes**, vacuum-fill only **(unopened). If collecting in 3 mL purple top tubes, please collect a fourth tube.**
- **Whole blood—Use one 3-, 5- or 7-mL gray-top or one 3-, 5- or 7-mL green-top tube**, vacuum-fill only **(unopened).**

Order of collection

Please mark the first purple-top tube of whole blood collected with a "1" using indelible ink. The first purple-top tube of whole blood collected will be used to analyze for blood metals.

Blanks

For **each lot number** of tubes and urine cups used for collection, please provide two empty unopened purple-top tubes, two empty unopened green- or gray-top tubes, and two empty unopened urine cups to serve as blanks for measuring background contamination. **Note: Although blanks do not have to be labeled, please secure their container tops in the same fashion described below for collected blood tubes and urine cups.**

Centers for Disease Control and Prevention
NCEH/DLS
4770 Buford Hwy, NE MS F-20
Atlanta, GA 30341-3724

Utah Department of Health
DELS/Chemical Terrorism Response
46 North Medical Drive
Salt Lake City, UT 84113-1105

EVIDENCE FORM

Date of Shipping:_____ Date of Sample Collection:_____

Event Name:_____ Facility Name:_____

For a group or a box of samples:	For an individual sample:
CDC/NCEH Group ID:_____	Local ID:_____ CDC NCEH ID:_____ CDC Sample ID:_____ CDC Unique ID:_____

For sample(s) from an exposed Individual:

Number of Urine Containers:_____ Sample IDs:_____

_____

_____

_____

_____

Comments:

Signature/ Name/ CDC User ID of Person Sealing Shipper:_____
(Signature) Printed Name User ID

Signature/ Name/ CDC User ID of Person Verifying Seal:_____
(Signature) Printed Name User ID

Local ID (non-CDC): Number issued by a non-CDC party submitting material to CDC.
CDC NCEH ID: Internal NCEH number/ID, otherwise known as the lab-friendly number.
CDC Sample ID: ID assigned to identify a specimen when first seen by CDC personnel. This number will be used as the parent number for all samples derived from the first identified and number specimen. (DASH number)
CDC Unique ID: (ASTRO number) ID is unique to CDC and will be assigned to each sample or every specimen entity.
CDC/NCEH Group or Box ID: ID defines the number assigned to the outer container for the specimens of a given tube or vial type.

***** Urine Samples *****

Centers for Disease Control and Prevention
NCEH/DLS
4770 Buford Hwy, NE MS F-20
Atlanta, GA 30341-3724

Utah Department of Health
DELS/Chemical Terrorism Response
46 North Medical Drive
Salt Lake City, UT 84113-1105

CHAIN OF CUSTODY FORM

Date: Time:

Collected By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

PAGE _____ OF_____

CENTERS FOR DISEASE CONTROL AND PREVENTION CHEMICAL TERRORISM URINE SPECIMEN COLLECTION **SHIPPING MANIFEST**		
DATE SHIPPED:_____ SHIPPED BY:_____ CONTACT TELEPHONE:_____ SIGNATURE:_____		
DATE RECEIVED:_____ RECEIVED BY:_____ SIGNATURE:_____		
TOTAL NUMBER OF SPECIMENS IN THIS CONTAINER:	URINE CUPS:	
TOTAL NUMBER OF BLANK URINE CUPS PROVIDED IN THIS CONTAINER:	BLANK URINE CUPS:	
COMMENTS:_____ _____ _____ _____		

SHIPPING ADDRESS:

CDC DASH
ATTN: Dr. RICHARD MEYER
1600 Clifton Road, NE
Bldg. 8/9
Atlanta, GA 30333
(888) 374-1764

PAGE _____ OF_____

PLEASE INDICATE THE AMOUNT OF URINE COLLECTED IN THE UC COLUMN UC = URINE CUP		
Patient/Victim ID Label	UC (Amount)	Comments:
		_____ _____ _____
		_____ _____ _____
		_____ _____ _____
		_____ _____ _____
		_____ _____ _____

NOTE: Please include 2 empty urine cups from each lot number collected for background contamination measurement.

Centers for Disease Control and Prevention
NCEH/DLS
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Atlanta, GA 30341-3724

Utah Department of Health
DELS/Chemical Terrorism Response
46 North Medical Drive
Salt Lake City, UT 84113-1105

EVIDENCE FORM

Date of Shipping:_____ Date of Sample Collection:_____

Event Name:_____ Facility Name:_____

For a group or a box of samples:	For an individual sample:
CDC/NCEH Group ID:_____	Local ID:_____ CDC NCEH ID:_____ CDC Sample ID:_____ CDC Unique ID:_____

For sample(s) from an exposed Individual:

Number of Purple Top Tubes:_____ Sample IDs:_____

_____

_____

Number of Green/Gray Top Tubes:_____ Sample IDs:_____

_____

_____

Comments:_____

_____

_____

Signature/ Name/ CDC User ID of Person Sealing Shipper:_____
(Signature) Printed Name User ID

Signature/ Name/ CDC User ID of Person Verifying Seal:_____
(Signature) Printed Name User ID

Local ID (non-CDC): Number issued by a non-CDC party submitting material to CDC.
CDC NCEH ID: Internal NCEH number/ID, otherwise known as the lab-friendly number.
CDC Sample ID: ID assigned to identify a specimen when first seen by CDC personnel. This number will be used as the parent number for all samples derived from the first identified and number specimen. (DASH number)
CDC Unique ID: (ASTRO number) ID is unique to CDC and will be assigned to each sample or every specimen entity.
CDC/NCEH Group or Box ID: ID defines the number assigned to the outer container for the specimens of a given tube or vial type.

******* Blood Samples *******

Centers for Disease Control and Prevention
NCEH/DLS
4770 Buford Hwy, NE MS F-20
Atlanta, GA 30341-3724

Utah Department of Health
DELS/Chemical Terrorism Response
46 North Medical Drive
Salt Lake City, UT 84113-1105

CHAIN OF CUSTODY FORM

Date: Time:

Collected By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

Received By:_____
(Printed Name) (Signature)

Reason:_____

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CENTERS FOR DISEASE CONTROL AND PREVENTION
CHEMICAL TERRORISM SPECIMEN COLLECTION
SHIPPING MANIFEST

DATE SHIPPED:_____

SHIPPED BY:_____

CONTACT TELEPHONE:_____

SIGNATURE:_____

DATE RECEIVED:_____

RECEIVED BY:_____

SIGNATURE:_____

TOTAL NUMBER OF SPECIMENS IN THIS CONTAINER:	PURPLE-TOP TUBES:	
	GREEN/GRAY-TOP TUBES:	
TOTAL NUMBER OF BLANK TUBES PROVIDED IN THIS CONTAINER:	PURPLE-TOP TUBES:	
	GREEN/GRAY-TOP TUBES:	

COMMENTS:_____

_____

_____

_____

SHIPPING ADDRESS:

CDC DASH
ATTN: Dr. RICHARD MEYER
1600 Clifton Road, NE
Bldg. 8/9
Atlanta, GA 30333
(888) 374-1764

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CENTERS FOR DISEASE CONTROL AND PREVENTION CHEMICAL TERRORISM SPECIMEN COLLECTION AND SHIPPING MANIFEST					
PLACE A √ IN EACH BOX FOR SAMPLES SHIPPED – PLACE A X IN EACH BOX FOR SAMPLES NOT SHIPPED PLEASE INDICATE THE SIZE TUBE COLLECTED (5 OR 7 mL) IN THE COMMENTS PT = PURPLE-TOP GT = GREEN/GRAY-TOP					
Patient/Victim ID Label	PT 1	PT 2	PT 3	GT	Comments:
					_____ _____ _____
					_____ _____ _____
					_____ _____ _____
					_____ _____ _____
					_____ _____ _____

NOTE: Please include 2 empty purple-top tubes and 2 empty green/gray-top tubes from each lot number collected for background contamination measurement.

Chemical Terrorism Event
Shipping Instructions - Blood

Separate tubes by type (purple or green/gray). Pack tubes separated by type in a gridded box. Prevent glass-to-glass contact.

Wrap each box with absorbent material (i.e., Chux pad) and seal with waterproof, tamper-evident forensic evidence tape.

Write initials half on the evidence tape and half on the absorbent material.

Place one wrapped box in the clear Saf-T-Pak® water-proof bag and seal.

Note: If primary receptacles have not been shown to meet the 95 kPa requirement, use 95 kPa compliant secondary packaging materials.

Place this bag inside the white Tyvek Saf-T-Pak® bag and seal.

Seal the opening of this bag with waterproof, tamper-evident forensic evidence tape. Write initials half on the evidence tape and half on the bag.

After all bagged boxes have been packaged, they need to be put in a shipper to be sent to the CDC or other LRN-C Laboratory.

Use Styrofoam-insulated, corrugated fiberboard shippers.

Place absorbent material such as a Chux pad in the bottom of the shipper.

Place cold packs in a single layer on top of the absorbent material.

Place the packaged boxes in the shipper, using plenty of cushioning material to minimize shifting while in transit.

Place additional cold packs on top of samples.

Place the Blood Shipping Manifest in a sealable plastic bag and put on top of the sample boxes inside the shipper.

Place the Styrofoam lid on the cooler.

Secure the outer container lid with filamentous shipping tape. Place your shipping address in the upper left hand corner of the box top and the CDC or other LRN-C Laboratory receiving address in the center.

Add the UN3373 label. If the label bears the words "Diagnostic Specimens," there is no need to rewrite this statement on the container.

If "Diagnostic Specimens" is not on the UN3373 label, stamp or write "Diagnostic Specimens" on the container's lid.

03/16/05

Chemical Terrorism Event
Shipping Instructions - Urine

Wrap each urine cup separately in absorbent material and seal with water-proof, tamper-evident forensic evidence tape. Write initials half on evidence tape and half on absorbent material.

OR

Use a gridded box to separate urine cups. Place sealed urine cups into the box. Urine cups do not need to be wrapped individually with absorbent material.

Separated urine cups should be wrapped with absorbent material. Evidence tape is used to secure the seal.

Write initials half on the evidence tape and half on the absorbent material.

Place wrapped cups in the waterproof inner Saf-T-Pak® bag and seal.

Note: If primary receptacles have not been shown to meet the 95 kPa requirement, use 95 kPa compliant secondary packaging materials.

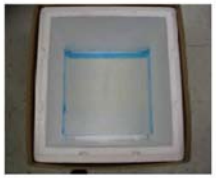
Place this bag inside the white Tyvek Saf-T-Pak® bag and seal.

Seal the opening of this bag with waterproof, tamper-evident forensic evidence tape. Write initials half on evidence tape and half on bag.

After all urine cups have been bagged, they need to be put in a shipper to be sent to the CDC or other LRN-C Laboratory.

Use Styrofoam-insulated shippers.

Place absorbent material such as a Chux pad in the bottom of the shipper.



Place a layer of dry ice in the bottom of the cooler. DO NOT use large chunks.

Place the packaged urine cups in the shipper, using plenty of absorbent material or cushioning material to minimize shifting while in transit.

Place additional dry ice on top of samples.

Place the Urine Shipping Manifest in a sealable plastic bag and put on top of the samples inside the shipper.

Place the Styrofoam lid on the cooler.

Secure the outer container lid with filamentous shipping tape. Place your shipping address in the upper left hand corner of the box top and the CDC or other LRN-C Laboratory receiving address in the center.

Add the UN3373 label. If the label bears the words "Diagnostic Specimens" there is no need to add this phrase elsewhere on the container.

If "Diagnostic Specimens" is not on the UN3373 label, stamp or write "Diagnostic Specimens" on the outer container's lid.

Place a Class 9 Label on the container.

This label MUST indicate the amount of dry ice in the container, UN 1845 and the proper name (either "Carbon Dioxide, Solid" or "Dry Ice").

03/16/05

Labeling

Label specimens with labels generated by your facility. These labels may include the following information: medical records number, specimen identification number, collector's initials, and date and time of collection. **Follow your facility's procedures for proper specimen labeling**. The collector's initials and date and time of collection will allow law enforcement officials to trace the specimen back to the collector should the case go to court and the collector is needed to testify that they collected the specimen.

Information provided on labels may prove helpful in correlating the results obtained from the Rapid Toxic Screen and subsequent analysis with the people from whom the specimens were collected.

Place a single, unbroken strip of waterproof, tamper-evident forensic evidence tape over each specimen top, being careful not to cover the specimen ID labels. This tape must make contact with the specimen container at two points. **The individual placing the evidence tape must identify themselves by writing their initials ½ on the container and ½ on the evidence tape.**

Maintain a list of names with corresponding specimen identification numbers at the collection site to enable results to be reported to the patients.

Packaging

Packaging consists of three components: primary receptacle (blood tubes or urine cups), secondary packaging (materials for protecting primary containers, absorbent material, and waterproof, 95 kPa pressure resistant packaging), and an outer container (Styrofoam-insulated corrugated, fiberboard containers).

Pack and ship these specimens as diagnostic specimens.

Secondary packaging

Blood Tubes—

- Separate each tube of blood collected from other tubes, or wrap tubes to prevent contact between tubes; this may be accomplished in a variety of ways such as a gridded box wrapped with absorbent material and sealed inside a plastic bag, sealable Styrofoam container, blood tube shipment sleeve and transport tube, and individually wrapped tubes sealed inside a plastic bag. **Secondary packaging must have its closure secured with a single strip of tamper-evident forensic evidence tape initialed ½ on the container and ½ on the evidence tape by the individual making the seal.**

- Place absorbent material between the primary receptacle and the secondary packaging. Use enough absorbent material to absorb the entire contents of primary receptacles. **According to 49 CFR 173.199(b), if specimens are to be transported by air, either the primary receptacle or the secondary packaging used must be capable of withstanding without leakage an internal pressure producing a pressure differential of not less than 95 kPa (0.95 bar, 14 psi). Verify in advance that the manufacturer of either the blood tube or secondary packaging used in your facility is in compliance with the pressure differential requirement.**
- To facilitate processing, package blood tubes so that similar tubes are packaged together (e.g., all purple-tops together) and not mixed (i.e., purple-tops and green/gray-tops in the same package).

Urine Cups—

- Separate each urine cup from other urine cups or wrap urine cups to prevent contact between urine cups.
- Place urine cups in secondary packages. A variety of secondary packages may be used, for example, gridded box wrapped with absorbent material and sealed inside a plastic bag or individually wrapped urine cups sealed inside a plastic bag. In either case verify that the urine cup or secondary container complies with the requirements stated in 49 CFR173.199(b). **Secondary packaging must have its closure secured with a single strip of tamper-evident forensic evidence tape initialed ½ on the container and ½ on the evidence tape by the individual making the seal.**

Outer containers

Use Styrofoam-insulated corrugated fiberboard containers (may be available from your transfusion service or send-outs department). **Do not ship frozen urine cups and blood tubes in the same package.**

Blood tubes— Ship at 4°C

- For cushioning, place additional absorbent material in the bottom of the outer container.
- Add a layer of frozen cold packs.
- Place secondary containers on top of the cold packs.
- Place additional cold packs or absorbent material between the secondary containers to reduce their movement within the outer container.
- Place a layer of frozen cold packs on top of the secondary containers.

Urine cups— Ship to ensure specimens remain frozen or freeze while in transport

- For cushioning, place additional absorbent material in the bottom of the outer container.
- **Add a layer of dry ice**. **Note:** Do not use large chunks of dry ice for shipment, because large chunks have the potential for shattering urine cups during transport.

Adapted from "Shipping Instructions for Samples Collected from People Potentially Exposed to Chemical Terrorism Agents"
Centers for Disease Control and Prevention (CDC), December 2004

- Place additional absorbent material between wrapped urine cups to reduce their movement within the outer container.
- **Add an additional layer of dry ice.**

Preparing documentation

Since blood tubes and urine cups are shipped separately, prepare a separate shipping manifest for each. Place each shipping manifest (with specimen identification numbers) in a plastic zippered bag on top of the specimens before closing the Styrofoam lid of the corrugated fiberboard container.

Chain of custody forms do not need to be transported with specimens. Each entity/organization handling the specimens is responsible for the specimens only during the time that they have control of the specimens. Each entity/organization receiving the specimens must sign-off on the chain of custody form of the entity/organization relinquishing the specimens to close that chain. When receiving specimens, each new entity/organization must begin their own chain of custody and have the entity/organization relinquishing the specimens sign their chain of custody to start the chain and indicate that they have transferred the specimens. **When specimens are transferred between entities/organizations, each entity/organization retains their chain of custody forms.**

Note: When the individual relinquishing the specimens (relinquisher) and the individual receiving the specimens (receiver) are not together at the time of specimen transfer, the relinquisher will document on their chain of custody that the receiver is FedEx Tracking Number or have the individual transporting the specimens sign the chain of custody to indicate that they have taken control of the specimens. Likewise, when the receiver receives the specimens, they will document on their chain of custody that the relinquisher is FedEx Tracking Number or the have the individual transporting the specimens sign the chain of custody.

Preparing containers for shipment

- Secure outer container tops and bottoms with filamentous shipping/strapping tape.
- Affix labels and markings adjacent to the shipper's/consignee's address that appears on the package.
- Place a UN 3373 diamond label on the outer package.
- Ensure that two orientation "up" arrows are located on two opposite sides of the outer container.
- Place a label on the outer container that indicates the proper name, "Diagnostic Specimens."

Adapted from "Shipping Instructions for Samples Collected from People Potentially Exposed to Chemical Terrorism Agents"
Centers for Disease Control and Prevention (CDC), December 2004

- For those containers with dry ice, place a class 9 label on the outer container. This label must indicate the amount of dry ice in the container, the address of the shipper, and the address of the recipient (in the absence of a shipper's declaration of dangerous goods). This label **must** be placed on the same side of the container as the "Diagnostic Specimens" label.

Shipping specimens

- Follow the guidance provided in your state's chemical terrorism comprehensive response plan.
- If you are directed to ship the specimens to CDC, please ship the specimens to the following address:

  CDC
  Attn: Dr. Richard Meyer
  1600 Clifton Road, NE
  Bldg. 8/9
  Atlanta, GA 30333
  (888) 374-1764

Questions

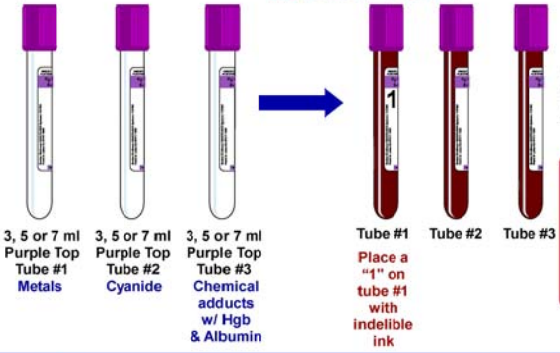
If you have any questions or problems with specimen packaging or shipment, please e-mail or call one of the following contacts at the CDC's National Center for Environmental Health, Division of Laboratory Sciences (DLS):

- Charles Buxton, DLS Chemical Terrorism Field Laboratory Coordinator
  cbuxton@cdc.gov, 7243001194@pagebb.com (text), or 888-461-6713 (voice or numeric)
- Dr. John Osterloh, DLS Chief Medical Officer, 770-488-7367
- DLS administrative office, 770-488-7950

Chemical Terrorism Event
Specimen Collection

For each patient, collect the following blood tubes: 3 EDTA (purple top) and 1 Gray or Green Top tube in that order.

FOR PEDIATRIC PATIENTS, COLLECT URINE ONLY UNLESS OTHERWISE DIRECTED BY THE CDC.



3, 5 or 7 ml Purple Top Tube #1 Metals

3, 5 or 7 ml Purple Top Tube #2 Cyanide

3, 5 or 7 ml Purple Top Tube #3 Chemical adducts w/ Hgb & Albumin

Tube #1 Place a "1" on tube #1 with indelible ink

Tube #2

Tube #3

Mix the EDTA tubes by inverting 5-6 times.

If collecting in 3ml purple top tubes, collect a 4th purple top tube.

Label each EDTA tube with the appropriate label as shown. Place a single strip of evidence tape over the top of the tube as shown, making sure it is secured on both sides of the tube. Initial tube so that your initials are half on the tube and half on the tape.

"-PT1" Purple Top Tube #1 Metals

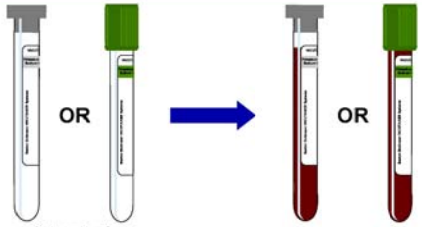
"-PT2" Purple Top Tube #2 Cyanide

"-PT3" Purple Top Tube #3 Chemical adducts w/ Hgb & Albumin

☆ Make sure that tube #1 is the first tube drawn, tube #2 is the second tube drawn, etc. and that the correct label is put on each tube!!

Store blood samples at 4°C.

☆ Make sure the Gray or Green top tube is collected after all the Purple top tubes.



OR

3, 5 or 7 ml Gray or Green Top Tube Volatile Organic Compounds

OR

Mix the tube by inverting 5-6 times.

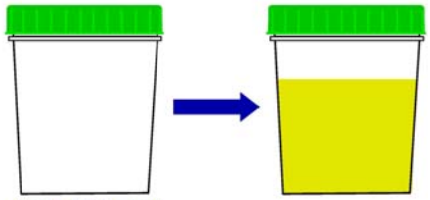
Label either the Gray or Green top tube with the appropriate label as shown. Place a single strip of evidence tape over the top of the tube as shown, making sure it is secured on both sides of the tube. Initial tube so that your initials are half on the tube and half on the tape.

OR

"-GRT" Volatile Organic Compounds

Store blood samples at 4°C.

In addition to the blood tubes, collect *at least* 25 mls of urine in a screw cap urine cup for each patient.



Military Nerve Agents
Organophosphate Pesticides
Incapacitating Agents and Drugs of Abuse
Ricin and Saxitoxin
Sulfur and nitrogen mustard
Lewisite
Heavy Metals (Hg, As, Sb, Ba, Be, Cd, Cs, Co, Pb, Mo, Pt, Tl, W, U, Se)
Creatinine correction

Label the Urine cup with the appropriate label as shown. Place a single strip of evidence tape across the top of the urine cup as shown, making sure it is secured on both sides of the cup. Initial the cup and tape so that your initials are half on the cup and half on the tape.

FOR PEDIATRIC PATIENTS, COLLECT URINE ONLY UNLESS OTHERWISE DIRECTED BY THE CDC.

"-UC"
Military Nerve Agents
Organophosphate Pesticides
Incapacitating Agents and Drugs of Abuse
Ricin and Saxitoxin
Sulfur and nitrogen mustard
Lewisite
Heavy Metals (Hg, As, Sb, Ba, Be, Cd, Cs, Co, Pb, Mo, Pt, Tl, W, U, Se)
Creatinine correction

Please note the placement of the labels. Labels should be placed on all tubes/cup so that when the tube/cup is standing upright the bar code looks like a ladder. Also note the placement of your initials.

Freeze urine specimens at ≤ -70°C.

12/20/04

CDC CT Event